# PRICE CHANGES OF MAJOR TEMPERATE AND TROPICAL ZONE AGRICULTURAL EXPORTS, 1947-1962

by

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Reprinted from
<u>FOREIGN AGRICULTURAL TRADE</u>
<u>OF THE</u>
<u>UNITED STATES</u>
February 1965

Trade Statistics and Analysis Branch
and International Monetary Branch
Development and Trade Analysis Division
Economic Research Service
U.S. Department of Agriculture

ERS-Foreign-112

March 1965

## SPECIAL in this issue

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Introduction.--In recent years much emphasis has been given to 2 problems of the less developed nations of the world: The chronic shortage of their foreign exchange reserves and the insufficiency of their diets. Tropical agricultural product exports are a major source of foreign exchange earnings in most of the less developed nations. Agricultural products from the temperate zone might be imported to provide the people of the less developed nations with a sufficient diet. In light of these problems and the influence that agricultural trade has upon them, a study has been conducted on the long-term movements in the postwar period of export prices of the major farm commodities shipped from each of the 2 climatic zones. This paper seeks to compare the trends and fluctuations of these prices from 1947 through 1962.

Although somewhat narrow in scope, this paper explores some aspects of past price movements probably not widely analyzed or discussed before. Data calculated for this paper and the resulting conclusions should add to the body of knowledge used by those working on the problems of the less developed nations. It also points out areas of suggested additional study and the need for a continuous flow and analysis of statistical data. Obviously needed is an analysis of export earnings from agricultural commodities as well as the analysis of price changes presented in this paper.

It is assumed in this paper that tropical agricultural exports originate in less developed nations and temperate zone commodities originate in highly developed nations. A very strong relationship, though not a 100 percent correlation, exists between climatic zone and degree of economic development. This relationship can be seen by the percentages shown in table 3.

All the nations of Western Europe, the United States, Canada, Australia, New Zealand, South Africa, and Japan were classified as highly developed nations; the remaining nations of the free world were defined as the less developed nations. This follows the classifications very often used by the United Nations and other international organizations.

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Table 3.--Free world agricultural exports from highly developed and less developed countries: Value, volume, and percentage, by major commodity, 1959-61 average

| Commodity | Free world exports | | Volume shipped by area | | |
|---|---|---|---|---|---|
| | Estimated value | Volume | Total | Highly developed countries | Less developed countries |
| | Million U.S. dollars | Thousand metric tons | | Percent | |
| Temperate Zone | | | | | |
| Wheat | 1,848 | 29,147 | 100 | 92 | 8 |
| Wheat flour | 370 | 4,462 | 100 | 96 | 4 |
| Barley | 295 | 5,749 | 100 | 91 | 9 |
| Corn | 566 | 11,266 | 100 | 68 | 32 |
| Bacon, ham, salted pork | 250 | 377 | 100 | 99 | 1 |
| Powdered milk | 201 | 597 | 100 | 100 | 0 |
| Butter | 379 | 460 | 100 | 93 | 7 |
| Cheese | 325 | 454 | 100 | 99 | 1 |
| Eggs (in the shell) | 261 | 476 | 100 | 74 | 26 |
| Soybeans | 334 | 3,808 | 100 | 98 | 2 |
| Wool 1/ | 1,654 | 1,398 | 100 | 80 | 20 |
| Total or average | 6,483 | --- | 100 | 2/88 | 2/12 |
| Tropical Zone | | | | | |
| Rice (milled) | 602 | 5,504 | 100 | 22 | 78 |
| Bananas | 301 | 3,872 | 100 | 4 | 96 |
| Copra | 253 | 1,477 | 100 | 0 | 100 |
| Peanuts (shelled) | 212 | 1,185 | 100 | 7 | 93 |
| Palm oil | 121 | 597 | 100 | 3 | 97 |
| Coffee | 1,871 | 2,640 | 100 | 2 | 98 |
| Tea | 604 | 522 | 100 | 5 | 95 |
| Cocoa | 522 | 891 | 100 | 2 | 98 |
| Sugar (raw) | 968 | 9,835 | 100 | 26 | 74 |
| Rubber (natural) | 1,649 | 2,558 | 100 | 4 | 96 |
| Jute | 196 | 848 | 100 | 2 | 98 |
| Total or average | 7,299 | --- | 100 | 2/8 | 2/92 |
| Commodities typical of both zones | | | | | |
| Live cattle | 434 | 3/3,166 | 100 | 60 | 40 |
| Beef and veal | 537 | 933 | 100 | 59 | 41 |
| Oranges and tangerines | 312 | 2,769 | 100 | 58 | 42 |
| Wine | 471 | 4/25,796 | 100 | 35 | 65 |
| Cotton | 1,933 | 3,188 | 100 | 44 | 56 |
| Tobacco | 840 | 671 | 100 | 52 | 48 |
| Oilseed cake and meal | 304 | 4,531 | 100 | 38 | 62 |
| Total or average | 4,831 | --- | 100 | 2/48 | 2/52 |
| Total all commodities | 18,613 | --- | --- | --- | --- |

1/ Greasy and scoured wool. 2/ Weighted by estimated value. 3/ Thousand head. 4/ Thousand hectoliters.

Selecting commodities.--Twenty nine commodities were designated as major agricultural exports of the free world. A major commodity was defined as one in which free world export value in 1961 was $200 million or greater as reported by the Food and Agriculture Organization of the United Nations in Trade Yearbook, Volume 16. This publication contains the latest figures available (1961) on a country-by-country basis at the time of preparation of this study. The value of these commodities exported annually between 1959 and 1961 averaged about $18.6 billion. This is about two-thirds of the total value of all agricultural commodities shipped by the free world in any given year during this period. 2/

Exports of the Sino-Soviet Bloc (including Cuba) are not included in the free world totals. Also, an exception to the $200 million lower limit was made in the case of palm oil. Edible oils, as a group, ranked high in value of agricultural commodities exported; but the export value of no single oil exceeded $200 million in 1961. Therefore, palm oil was selected to represent this group since it was the largest in value.

A commodity is shown in (1) the temperate zone group, if more than 65 percent, by volume, of the free world exports of such commodity was shipped from highly developed countries; (2) in the tropical zone group, if more than 65 percent was shipped from less developed countries; and (3) as typical of both zones in the remaining cases. The cutoff point could have been set as high as 90 percent, and most commodities would still have qualified for inclusion in either the temperate or the tropical zone group. Price movements of the 7 commodities typical to both zones were not analyzed.

This procedure left 22 commodities to analyze; by coincidence 11 were primarily from the temperate zone and 11 from the tropical zone. Their combined export value averaged $13.8 billion annually, or close to 50 percent of the average annual value of all agricultural goods shipped during the 1959-1961 period.

Statistical measures used.--As a means of analyzing price changes from 1947 to 1962, 2 statistical measures were used. First, to measure trends, the regression coefficient $b$ in the formula for a straight line, $Y=a+bX$, was determined for the data representing price changes of each commodity selected. This value was determined by the "least squares" method and represents the average annual change in prices over a medium- or long-term period on a straight-line basis. With the figures in this form, it was difficult to make meaningful comparisons between commodities. An average annual decline of $17.25 per metric ton for wool during the past 16 years was, when expressed as a ratio of the average price of wool during this period, little more than a 1 percent annual decline. At the same time, a $2.86 decline per metric ton for barley was a 4.6 percent annual decline. For this reason the figures representing the slope of the various trends have also been expressed as ratios of the respective average prices (fig. 1 and table 4).

Second, to measure the variation of prices, the standard error of estimate around the trend line was calculated for each set of price data. As with the

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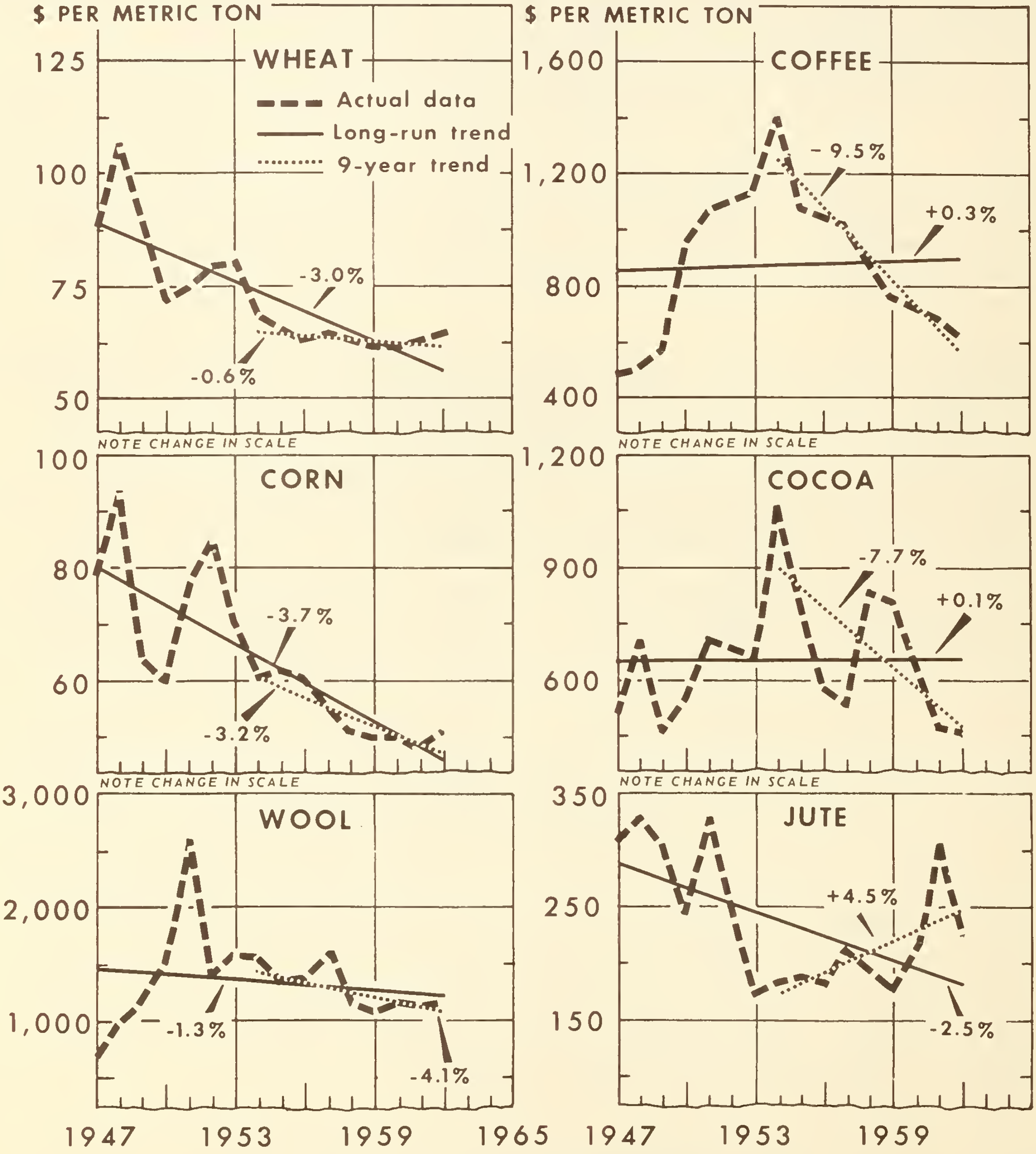
2/ Free world export tonnages for each commodity were obtained by subtracting Communist country figures from world totals. The tonnages so obtained were multiplied for each year by the respective average world unit values. Thus, unit values used in calculating the data for table 3 include the exports of Communist countries.

## WORLD AVERAGE EXPORT PRICES AND TRENDS

*Selected Commodities*



*BASIC DATA FROM FAO, STATE OF FOOD AND AGRICULTURE, 1963.*
*EXPORT PRICES ARE WORLD AVERAGE EXPORT UNIT VALUES.*

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FIG. 1

Table 4.--Changes in unit values of free world agricultural exports: Major commodities, 1954-62 and 1947-62 1/

| Commodity | Annual change (b) 2/ | | Annual change as a percent of average unit value | |
|---|---|---|---|---|
| | 9 years (1954-1962) | 16 years (1947-1962) | 9 years (1954-1962) | 16 years (1947-1962) |
| | -- U.S. dollars -- | | -- Percent -- | |
| Temperate Zone | | | | |
| Wheat | -0.38 | -2.17 | -0.6 | -3.0 |
| Wheat flour | -2.65 | -3.72 | -3.1 | -3.8 |
| Barley | -0.91 | -2.86 | -1.8 | -4.6 |
| Corn | -1.71 | -2.36 | -3.2 | -3.7 |
| Bacon, ham, salted pork | -1.70 | -1.01 | -0.3 | -0.2 |
| Powdered milk | -7.50 | -12.69 | -2.0 | -3.0 |
| Butter | -27.25 | -17.23 | -3.3 | -2.0 |
| Cheese | +8.19 | +3.52 | +1.2 | +0.5 |
| Eggs (in the shell) | -16.37 | -12.23 | -2.8 | -2.0 |
| Soybeans | -1.90 | -2.61 | -2.0 | -2.5 |
| Wool (greasy) | -52.39 | -17.25 | -4.1 | -1.3 |
| Weighted average 3/ | --- | --- | -2.2 | -2.3 |
| Tropical Zone | | | | |
| Rice (milled) | -3.31 | -3.63 | -2.8 | -2.7 |
| Bananas | -3.83 | -1.18 | -4.1 | -1.2 |
| Copra | -0.80 | -3.67 | -0.5 | -2.1 |
| Peanuts (shelled) | -4.21 | -1.35 | -2.3 | -0.7 |
| Palm oil | +0.48 | -3.11 | +0.2 | -1.4 |
| Coffee | -87.08 | +2.64 | -9.5 | +0.3 |
| Tea | -22.83 | +10.21 | -1.8 | +0.9 |
| Cocoa | -53.13 | +0.65 | -7.7 | +0.1 |
| Sugar (raw) | +0.31 | -0.36 | +0.3 | -0.4 |
| Rubber (natural) | +2.25 | +6.91 | +0.4 | +1.2 |
| Jute | +9.47 | -5.90 | +4.5 | -2.5 |
| Weighted average 3/ | --- | --- | -3.4 | -0.1 |

1/ Original data are world average unit values per metric ton.

2/ b designates the regression coefficient, i.e. the slope of the line in the formula Y = a+bX.

3/ Weighted by estimated average value, 1959-1961.

absolute value of b, it was difficult to make meaningful comparisons between commodities with the figures in this form. Therefore, each standard error of estimate was also expressed, respectively, as a percent of the average price over the entire period. Comparisons between commodities were thus facilitated (table 5).

The basic source of the data used in this study is Food and Agriculture Organization of the United Nations, The State of Food and Agriculture, 1963, pp. 214-215. The figures used are not actually prices but are the world average export unit values per metric ton expressed in U.S. dollars. These unit values are weighted averages of regional unit values computed from data for only the main trading countries of each region covering generally 70 percent or more of the total trade of the region. The weights applied to the regional unit values represent the total trade of each region. 3/

Prices differ from unit values in that prices specify, either directly or indirectly, a specific grade of a commodity, the type of packaging or container, the place of sale, and the basic terms of the transaction. Unit values are the total value (exported) of all grades of a particular commodity divided by the total quantity. Prices usually fluctuate more than unit values but both measures show the same trend. The data for 1962 are preliminary.

Time period.--The post-World War II period was selected for study for 2 reasons: First, the unit value data were readily available for this period. Comparable historical statistics of any sort are difficult to obtain, and even the data used here are probably subject to some minor incomparabilities. Second, it would be unrealistic to speak of the problems of the less developed nations prior to World War II. Many did not exist as nations but rather as colonies prior to this period. As such, their problems could not be considered as independent problems but merely as extensions of those of the parent nations.

The statistical analyses are divided into 2 time periods: 1947-1962 and 1954-1962. In many of the international forums being held today the point is made that prices of commodities exported from the less developed nations are declining, either absolutely or in relation to the prices of their imports from the highly developed nations, i.e., that the terms of trade have moved adversely for the less developed nations. These arguments must explicitly or implicitly refer to the changes in the terms of trade since 1954. 4/ According to United Nations figures, the terms of trade generally moved favorably for the less developed nations from 1948 until 1954, although the peak appears to have been reached in 1951 during the height of the Korean War. Since 1954, they have declined each year until 1963. 5/ For this reason, the unit values of agricultural commodities have been compared for both the long run (past 16 years) and the medium run (past 9 years). Tables 4 and 5 include data for both of these periods. It is recognized that these 2 time periods are not mutually exclusive so the changes in the data over the past 9 years obviously influence the changes over the longer period.

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3/ Food and Agriculture Organization, Trade Yearbook, Vol. 16, op.cit. page 37.

4/ In light of 1963-1964 price movements, the reference probably should be to the years since 1954 but prior to 1963 especially for these nations primarily exporting sugar, coffee, and cocoa.

5/ United Nations, Statistical Yearbook, various issues, 1959-1963.

Table 5.--Fluctuations from trends in unit values of free world agricultural exports: Major commodities, 1954-62 and 1947-62 1/

| Commodity | Standard error of estimate (Sy.x) | | Sy.x as a percent of average unit value | |
|---|---|---|---|---|
| | 9 years (1954-1962) | 16 years (1947-1962) | 9 years (1954-1962) | 16 years (1947-1962) |
| | -- U.S. dollars -- | | -- Percent -- | |
| Temperate Zone | | | | |
| Wheat | 2.29 | 7.40 | 3.6 | 10.2 |
| Wheat flour | 5.18 | 8.32 | 6.1 | 8.5 |
| Barley | 2.02 | 10.39 | 3.9 | 16.6 |
| Corn | 2.50 | 8.40 | 4.6 | 13.2 |
| Bacon, ham, salted pork | 22.86 | 44.49 | 3.4 | 6.5 |
| Powdered milk | 30.21 | 56.57 | 8.0 | 13.3 |
| Butter | 93.21 | 97.87 | 11.2 | 11.1 |
| Cheese | 36.35 | 52.48 | 5.2 | 7.6 |
| Eggs (in the shell) | 19.67 | 43.35 | 3.3 | 6.9 |
| Soybeans | 7.85 | 10.82 | 8.4 | 10.5 |
| Wool (greasy) | 140.65 | 414.81 | 10.9 | 30.7 |
| Weighted average 2/ | --- | --- | 6.6 | 15.7 |
| Tropical Zone | | | | |
| Rice (milled) | 9.59 | 18.07 | 8.2 | 13.7 |
| Bananas | 4.98 | 6.10 | 5.4 | 6.4 |
| Copra | 24.20 | 28.82 | 15.3 | 16.6 |
| Peanuts (shelled) | 11.78 | 32.61 | 6.4 | 17.2 |
| Palm oil | 12.14 | 33.79 | 6.0 | 15.5 |
| Coffee | 75.18 | 273.20 | 8.2 | 31.0 |
| Tea | 48.89 | 119.00 | 3.9 | 10.2 |
| Cocoa | 155.99 | 176.99 | 22.6 | 27.0 |
| Sugar (raw) | 8.84 | 7.91 | 8.9 | 7.8 |
| Rubber (natural) | 102.50 | 182.20 | 17.1 | 30.8 |
| Jute | 34.29 | 51.53 | 16.3 | 21.5 |
| Weighted average 2/ | --- | --- | 11.2 | 22.0 |

1/ Original data are world average unit values per metric ton.
2/ Weighted by estimated average value, 1959-1961.

Trend analysis.--As noted above, figures were developed and compiled in table 4 on the annual average change in unit values for 22 different agricultural commodities. In addition, a weighted average for the commodities in each zone was determined. 6/ These averages indicate some of the general trends of all commodities from the less developed nations and the highly developed nations during the postwar period.

As a checking device, an average unit value (price) index was calculated for commodities as a group from both the temperate and tropical zones. These indexes were then plotted along with the overall unit value index shown by the Food and Agricultural Organization (FAO) in The State of Food and Agriculture, 1963 (fig. 2). In each case the base period was 1952-1953. The quality of the 2 indexes computed for this paper and the representativeness of the commodities selected for study are indicated by the fact that the overall index computed by FAO falls approximately half way between them in every year except in 1962. If the overall index fell above or below both of the other lines, it would indicate that commodities not included in this study affected the index more than those which were included. The reason the overall index moved above both lines in 1962 is probably due to the preliminary nature of the figures used for that year. All general conclusions drawn from an analysis of the data in table 4 regarding the climatic zones as a whole are consistent with the changes reflected in the unit value indexes shown in fig. 2. Table 4, in addition, analyzes the changes associated with the various individual commodities.

Over the past 16 years the trends in unit values of commodities from the tropical zone have varied from commodity to commodity. The unit values of coffee, cocoa, and sugar have shown little long-run change. (Variations from the trends have been great for some commodities, of course, but these will be discussed later.) Significant declines have occurred in the unit values of rice, copra, and jute although in no case was the average decline more than 3 percent annually. Also there were minor declines for bananas, peanuts, and palm oil. These declines, however, were almost entirely offset by a fairly substantial long-term increase for rubber and a minor increase for tea. The net result of all these changes is that the export unit values of the major tropical commodities, as a group, show neither a significant long-term rise nor decline in the postwar period.

At the same time, data for the temperate zone indicate quite a different situation. Overall, the long-run export unit values have declined significantly, about 2.3 percent annually. For barley, it declined by more than 4 percent annually, and for wheat, wheat flour, corn, and powdered milk, by 3 percent or more. Only the unit value for cheese trended upward and only slightly in the long-run. 7/

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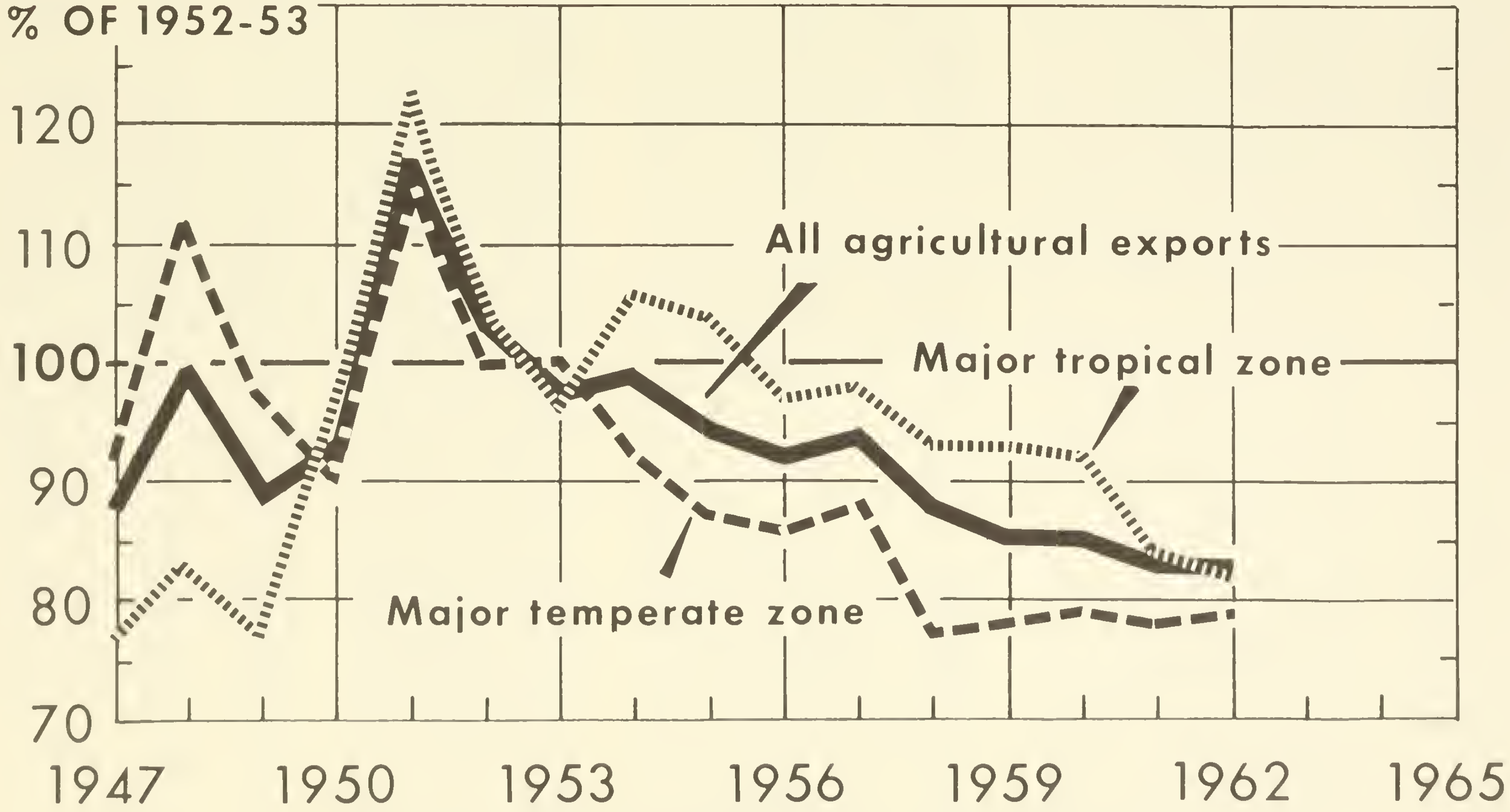
6/ The weights used were based upon the relative export values of these commodities during the period 1959-1961.

7/ After this article was written, revised data for 1962 became available in the 1964 edition of The State of Food and Agriculture (FAO). Except for barley, the revisions were small enough to have no significant effect on the data prepared for this study. An upward revision of the unit value data of about 23 percent was made for barley. Therefore, the downward trends reported for barley are somewhat overstated.

## EXPORT PRICES OF MAJOR AGRICULTURAL COMMODITIES, BY CLIMATIC ZONE



BASIC DATA FROM FAO, STATE OF FOOD AND AGRICULTURE, 1963.
EXPORT PRICES ARE WORLD AVERAGE EXPORT UNIT VALUES.

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FIG. 2

The figures reflect another difference between the temperate and tropical zones. As a group, no significant difference existed in the trend for the temperate zone commodities between the overall period and the past 9 years (2.3 vs. 2.2, respectively). For the tropical zone, a radical difference occurs in the behavior of the data for the 2 periods; the long-run postwar trend shows little or no change while the trend for the past 9 years is sharply downward, averaging over 3 percent annually. For any particular temperate zone commodity the degree of change increased, or decreased (wheat for example went from -3.0 to -0.6) but the direction of change was not reversed for any commodity. For the tropical zone, however, there were 6 reversals. Probably the most dramatic example was coffee (fig. 1). The export unit value of coffee increased slightly during the 16-year period under study. The average unit value in 1962 was about the same as it was in 1949 and the straight line trend shows little change. However, the trend line for the past 9 years was sharply downward (-9.5 percent). The trends for cocoa and jute also are greatly different for the 2 periods. However, a review of the figures in table 5 indicates that cocoa and jute prices have deviated greatly during both time periods.

Fluctuation of unit values.--This introduces the obvious point that straight line trends in some cases, but not in others, are good indicators of past changes. A measure of past fluctuations indicates the magnitude of the problems less developed nations have had in planning imports from year to year. Plans based upon high prices (and also assuming high foreign exchange earnings) may have to be scaled downward when prices drop suddenly, or else borrowing at high rates of interest may become necessary. Similarly, low prices may have influenced some nations at the time of planning. Under these conditions, plans may have been drawn at levels below a nation's long-term ability to import; once prices increase, plans may need to be redrawn. These nations can little afford an incident which adds to the instability of their developing economies.

Variation from the average annual changes (b) or trend lines shown in table 4 is measured by the standard errors of estimates shown in the first 2 columns of table 5. To permit comparison between commodities, these standard errors were expressed as percentages of their average unit values resulting in a measure which has the same relationship to the standard error of estimate as the coefficient of variation does to the standard deviation. (See last 2 columns of table 5.) These percentages are referred to below as the "fluctuation" or "variation" of the unit values of the various commodities.

The general significance of the figures is that the larger the figure the larger the variation or fluctuation of the unit values around the respective trend lines.

While the trend data show that the tropical zone commodities have fared better in the postwar period than the temperate zone commodities -- in the long run if not in recent years -- the situation is quite the reverse when it comes to stability of unit values. In the long run, the unit values of commodities from the less developed nations fluctuated about 40 percent more as a group than those from the highly developed nations; over the past 9 years they fluctuated 70 percent more. In the tropical zone, unit values of coffee, cocoa, rubber, and jute all showed exceedingly high degrees of fluctuation over the past 16 years; variations for copra, peanuts, and palm oil also were fairly high. In the temperate zone, only the unit value for wool showed a very high degree of fluctuation, with the unit value for barley also showing a fairly high degree.

However, in both zones the degree of fluctuation decreased for 1954-1962. Over the long run (1947-1962), the variation of the temperate zone commodities as a group was 15.7 percent; but in the past 9 years the corresponding figure was 6.6 percent. For the tropical zone, the variation dropped from 22.0 to 11.2 percent. These changes are equivalent to roughly a 50 percent decline. On an individual basis significant declines occurred in variations for wheat, barley, corn, wool, peanuts, palm oil, coffee, tea, and rubber. In contrast, the variation for butter showed no significant change while those for copra, cocoa, and jute declined somewhat but still remained at fairly high levels. The variation for bananas declined somewhat for the past 9 years over what it was for the past 16 years, but the variation has never been very high.

Sugar unit values, on the other hand, fluctuated more during the shorter, more recent period, because of (1) substitution of relatively high-priced non-Cuban exports to the United States for Cuban exports and (2) high valuation reported for Cuban barter trade with the Soviet Bloc.

The variations over the past 16 years have, in part, been due to the disruptive forces created by World War II and the Korean conflict. Data for 1954-1962 bear this out, indicating lesser fluctuations. Wars, however, are only part of the answer. If data for 1963 and 1964 were included in the calculations, the fluctuations would be greater than now estimated. Prices for a number of tropical zone products during those 2 years increased sharply, thus reversing the recent trend for many of these products. War cannot account for these changes.

Cyclical variations may be one reason for the greater variation around the trend for the longer period. A trend line for a short period may have only year-to-year or random variations about it. This is particularly true if the short period under study coincides with the entire downward or upward movement of a cycle. This appears to be the situation in the case of coffee (fig. 1). This assumes of course that there are cycles which cannot necessarily be concluded from the limited scope of this study. If there are cyclical as well as random variations, then straight line trends become less valuable measures of change except over very long periods of time.

Finally, it should be mentioned that the degree of fluctuation of the world average export unit value does not fully reflect the full variation of a particular country's export earnings. A particular nation may have a small crop due to adverse weather conditions in the same year that world market prices are low. Conversely, it may have a large crop when prices are high.

Influence on terms of trade.--Terms of trade of the less developed nations have changed in close parallel to changes in the respective export unit values of their agricultural commodities. The continuous deterioration of the terms of trade for these nations since 1954 not only paralleled but of course was mostly caused by the decline in the export unit value of their agricultural commodities. The other causal factor was the increase in unit value of imports. The imports of the less developed nations are largely manufactured goods. The unit values of such imports may rise not only as a result of real price increases but also as a result of quality improvements. Between 1954 and 1962 the unit value index for manufactured goods moved from 94 to 102 (1958=100). 8/

If the export unit values of tropical zone agricultural commodities and manufactured goods had been the only forces in operation during the 1954-1962 period, the situation would have been worse for the less developed nations than it actually was. Acting in their favor was the significant decline in the unit values of temperate zone farm products which they import. Purchasing such commodities favorably influenced their terms of trade somewhat. Thus, for those nations that had a high ratio of agricultural imports to manufactured imports from the highly developed nations the terms of trade moved less unfavorably.

The decline in the unit values of the tropical zone agricultural commodities is not entirely serious since the less developed nations also import from one another. According to available figures agricultural imports from both climatic zones accounted for as little as 6 percent for Uganda to just over 40 percent for Ceylon. 9/

Summary.--Four basic conclusions can be drawn from the data presented here:

(1) For the 1947-1962 period, prices for major agricultural commodities from the less developed nations on the average showed no long-term declines. Although several commodities showed some long-term declines, the degree of decline was not as large as it was for a number of commodities from the highly developed nations.

(2) In general, prices of major commodities from the highly developed nations declined rather steadily at about 2 percent a year during 1947-1962.

(3) In the years 1954-1962, prices of major agricultural commodities from the less developed nations underwent a general and significant decline.

(4) Prices of the major commodities from the less developed nations fluctuated considerably more than did those from the highly developed nations. However, the degree of fluctuation for both areas was less for the past 9 years than it was for the overall period.

Thus, on the export side, the problems faced by the less developed nations during the postwar period do not appear to have been long-term price declines but rather year to year, or perhaps cyclical, fluctuations in prices.

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8/ United Nations, Statistical Yearbook, 1963, New York, 1964, p. 474.

9/ Food and Agriculture Organization, Trade Yearbook, Vol. 16, Rome, 1963. Table 1.